## REMARKS

The allowance of claims 33 to 41 is appreciated. Similarly, the withdrawal of all of the previous prior art rejections, except for that based on Afflerbaugh is appreciated.

I. *Obviousness Rejection:*

The rejection of claim 32 as being obvious over Afflerbaugh et al (US 4, 202,764) is traversed. Independent claim 32 has been amended to require a controller that determines an osmotic pressure level in a filter and adjusts a rate of fluid removal from the filter based on the determined osmotic pressure level. Afflerbaugh et al do not disclose the steps of measuring an osmotic pressure difference and adjusting the filtrate rate based on the osmotic pressure.

The filtrate flow rate in the Afflerbaugh dialysis system is set at a "predetermined rate" and controlled by an ultrafiltrate pump 38. Afflerbaugh et al, col. 4, lns. 64-66. ("The ultrafiltrate pump 38 is activated and adjusted until a desired or predetermined ultrafiltration rate is achieved."). Afflerbaugh et al describe a set up mode in which the filtrate rate is set and the corresponding transmembrane pressure is measured. Afflerbaugh, col. 4, ln. 58 to col. 5, ln. 10. This measured transmembrane pressure is then used as a control point to achieve a desired filtration rate. Afflerbaugh, col. 5, lns. 2-10. The filtrate rate is not dependent on osmotic pressure, as is recited in rejected claim 32.

Afflerbaugh et al teach measuring "transmembrane pressure" which is different from osmotic pressure. Transmembrane pressure in Afflerbaugh is a measurement of the pressure required across the filter membrane to generate a predetermine flow of liquid

(ultrafiltrate). Osmotic pressure is the pressure generated by differences in liquid constituent concentrations across a membrane and is not a function of flow rate. There is no osmotic pressure sensor disclosed or suggested in Afflerbaugh et al. There is no teaching in Afflerbaugh et al of a separate osmotic pressure measurement device that has a blood chamber and a filtrate chamber.

Afflerbaugh et al teach measuring pressure in a dialyzer. Afflerbaugh et al teach away from measuring osmotic pressure in a device separate from a filter or dialyzer, is the pressure difference between the blood pressure on one side of a membrane and the dialysis solution or filtrate pressure on the other side of the membrane. Afflerbaugh, col. 1, lns. 43-52. Afflerbaugh et al (see col. 2 lines 40 to 46) disclose a method to calibrate transmembrane pressure to estimate a resultant ultrafiltration (UF) rate. The Afflerbaugh system uses a flow meter to determine the correlation with transmembrane pressure. *See e.g.*, Afflerbaugh at col. 4 lines 40 to 68 and col. 5 lines 1 to 26. The transmembrane pressure is measured while blood flows through the dialyzer. Afflerbaugh, col. 4, lns. 56-58. There is no teaching or suggestion in Afflerbaugh et al of measuring osmotic pressure across the dialyzer membrane of measuring osmotic pressure in a device separate from the dialyzer membrane.

*II. New Claims 42 to 72 Correspond to Previously Examined Claims 1 to 31:*

The first USPTO Action in this application considered claims 1 to 31, which had been cancelled in a preliminary amendment. In response to the first USPTO Action, applicants amended claims 1 to 31 to overcome the rejections stated in that Action. The

second USPTO Action (June 6, 2007) pointed out that the cancellation of claims 1 to 31 in the preliminary amendment prevented further examination of these now cancelled claims. This response adds new claims 42 to 72 which correspond to cancelled claims 1 to 31, with appropriate revisions to overcome the rejections made in the first USPTO Action. The reasons for patentability of claims 42 to 72 (former claims 1 to 31) are set forth in detail in the Amendment of 11 April 2007.

The following table indicates the correspondence between original claims 9 to 12, 14 to 21 and 50 to 53, 55 to 62 that were indicated to be define patentable subject matter in the USPTO Action of January 12, 2007. New claims 50 to 53 and 55 to 62 include the amendments to claims 9 to 12, 14 to 21 that were submitted (but not entered) in the Response of April 11, 2007.

| Original Claims 1-31 | New Claims 42 to 72 | Status of Original Claims as stated in 1/12/2007 PTO Action |
|---|---|---|
| 9 | 50 - independent | Allowable dependent claim |
| 10 | 51 - independent | Allowable dependent claim |
| 11 | 52 – depends on 51 | Allowable dependent claim |
| 12 | 53 - depends on 51 | Allowable dependent claim |
| 14 | 55 - independent | Allowable dependent claim |
| 15 | 56 - independent | Allowable dependent claim |
| 16 | 57 - independent | Allowable dependent claim |
| 17 | 58 - depends on 57 | Allowable dependent claim |
| 18 | 59 - depends on 56 | Allowable dependent claim |
| 19 | 60 - independent | Allowable dependent claim |
| 20 | 61 - independent | Allowable dependent claim |
| 21 | 62 - independent | Allowable dependent claim |

All claims are in good condition for allowance. If any small matter remains outstanding, the Examiner is requested to telephone applicants' attorney. Prompt reconsideration and allowance of this application is requested.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: /Jeffry Nelson/
Jeffry H. Nelson
Reg. No. 30,481

JHN:glf
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100